

CLAIMS

1. A pump including a driving part and a pumping part, the pumping part including a plurality of generally parallel planar elements all mounted for rotation about a first axis, wherein the driving part is coupled to the pumping part by means of a magnetic coupling device such that rotation of the driving part causes rotation of the pumping part about the first axis.
2. A pump according to claim 1 wherein the magnetic coupling includes a first coupling part which is connected to the driving part for rotation with the driving part, and a second coupling part which is connected to the pumping part for rotation with the pumping part, one of the first or second parts including a magnet, and the other of the first or second parts including an electrically conductive part.
3. A pump according to claim 2 wherein the first coupling part and second coupling part are mounted for rotation about the first axis.
4. A pump according to claim 2 wherein the magnet is a permanent magnet.
5. A pump according to claim 2 wherein the magnet has a side wall which encloses a generally cylindrical space, and the electrically conductive part is generally cylindrical and is located at least partly within the wall of the magnet.
6. A pump according to claim 5 wherein the electrically conductive part of the magnetic coupling includes a plurality of elongate copper elements arranged in a generally circular array around an axis of rotation of the first part of the magnetic coupling, a longitudinal axis of each copper element being generally parallel to the axis of rotation.

7. A pump according to claim 6 wherein the electrically conductive part includes two generally annular copper plates which are mounted on either side of the copper elements in contact with end portions of all the copper elements.

8. A pump according to claim 6 wherein the electrically conductive part includes a soft iron core.

9. A pump according to claim 2 wherein the second coupling part is, in use, immersed in the liquid to be pumped, and a sealing part is provided between the first and second coupling parts, the sealing part substantially preventing pumped liquid from contacting the first coupling part and the motor.

10. A pump according to claim 1 wherein the pumping part includes a plurality of generally parallel, co-axial discs.

11. An engine including a lubricant pump, the pump including a driving part and a pumping part, the pumping part including a plurality of generally parallel planar elements all mounted for rotation about a first axis, wherein the driving part is coupled to the pumping part by means of a magnetic coupling device such that rotation of the driving part causes rotation of the pumping part about the first axis.

12. A lubrication system for an engine including two lubricant pumps, one of which is a pump including a driving part and a pumping part, the pumping part including a plurality of generally parallel planar elements all mounted for rotation about a first axis, wherein the driving part is coupled to the pumping part by means of a magnetic coupling device such that rotation of the driving part causes rotation of the pumping part about the first axis, the pump being adapted to pump lubricant on start-up of the engine.